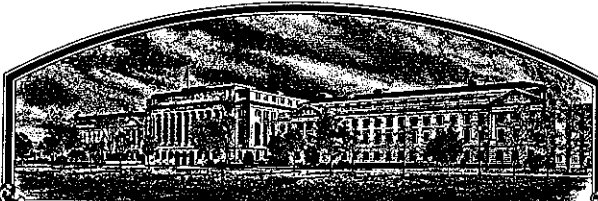


No.

8200177



# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

**Lofts Seed Inc.**

Whereas, THERE HAS BEEN PRESENTED TO THE

**Secretary of Agriculture**

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXHIBIT THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT AS AMENDED, 7 U.S.C. 2321 ET SEQ.

PERENNIAL RYEGRASS

'Prelude'



In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington this 31st day of May in the year of our Lord one thousand nine hundred and eighty-four.

Attest

*Kenneth H. Evans*  
Commissioner  
Plant Variety Protection Office  
Livestock, Meat, Grain & Seed Division  
Agricultural Marketing Service

*John R. Block*  
Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
LIVESTOCK, MEAT, GRAIN & SEED DIVISION

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

FORM APPROVED: OMB NO.0581-0055

No certificate for plant variety protection may be issued unless a completed application form has been received (5 U.S.C. 553).

1. NAME OF APPLICANT(S) Lofts Seed Inc.		2. TEMPORARY DESIGNATION R-40		3. VARIETY NAME Prelude	
4. ADDRESS (Street and No. or R.F.D. No., City, State, and Zip Code) Chimney Rock Rd., P.O.B. 146 Bound Brook, NJ 08805		5. PHONE (Include area code) 201-560-1590		FOR OFFICIAL USE ONLY PVPO NUMBER 8200177	
6. GENUS AND SPECIES NAME <u>Lolium perenne</u> L.		7. FAMILY NAME (Botanical) Gramineae		FILING DATE 9/8/82 TIME 2:30 <input type="checkbox"/> A.M. <input checked="" type="checkbox"/> P.M.	
8. KIND NAME Perennial Ryegrass		9. DATE OF DETERMINATION 1980		FEES RECEIVED AMOUNT FOR FILING \$ 500.00 DATE 9/8/82 AMOUNT FOR CERTIFICATE \$ 250.00 DATE 5/9/84	
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.) Corporation				12. DATE OF INCORPORATION 11/10/48	
11. IF INCORPORATED, GIVE STATE OF INCORPORATION New Jersey					
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS Mr. Richard Hurley Lofts Seed Inc. P.O.B. 146, Bound Brook, NJ 08805					

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED

- a. ☒ Exhibit A, Origin and Breeding History of the Variety (See Section 52 of the Plant Variety Protection Act.)
- b. ☒ Exhibit B, Novelty Statement
- c. ☒ Exhibit C, Objective Description of the Variety (Request form from Plant Variety Protection Office.)
- d. ☒ Exhibit D, Additional Description of the Variety

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act.) ☐ Yes (If "Yes," answer items 16 and 17 below) ☒ No

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? ☒ Yes ☐ No

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED? ☒ Foundation ☐ Registered ☒ Certified


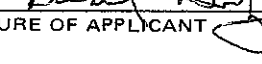
18. DID THE APPLICANT(S) FILE FOR PROTECTION OF THE VARIETY IN THE U.S. OR OTHER COUNTRIES? ☐ Yes (If "Yes," give names of countries and dates) ☒ No

19. HAVE RIGHTS BEEN GRANTED IN THE U.S. OR OTHER COUNTRIES? ☐ Yes (If "Yes," give names of countries and dates) ☒ No

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT 	DATE 9/1/82
SIGNATURE OF APPLICANT 	DATE

## INSTRUCTIONS

**General:** Send an original copy of the application and exhibits, at least 2,500 viable seeds, and \$500 fee (\$250 filing fee and \$250 examination fee) to U.S. Department of Agriculture, Agricultural Marketing Service, Livestock, Meat, Grain and Seed Division, Plant Variety Protection Office, National Agricultural Library Building, Beltsville, Maryland 20705. (See section 180.175 of the Regulations and Rules of Practice.) Retain one copy for your files. All items on the face of the form are self-explanatory unless noted below.

### Item

- 9 Give the date the applicant determined that he had a new variety based on (1) the definition in section 41(a) of the Act and (2) the date a decision was made to increase the seed.
- 14a Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method; (2) the details of subsequent stages of selection and multiplication; (3) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified and (4) evidence of uniformity and stability.
- 14b Give a summary statement of the variety's novelty. Clearly state how this novel variety may be distinguished from all other varieties in the same crop. If the new variety most closely resembles one or a group of related varieties: (1) identify these varieties and state all differences objectively; (2) attach statistical data for characters expressed numerically and demonstrate that these differences are significant; and (3) submit, if helpful, seed and plant specimens or photographs of seed and plant comparisons clearly indicating novelty.
- 14c Fill in the Exhibit C, Objective Description form, for all characteristics for which you have adequate data.
- 14d Describe any additional characteristics that are not described, or whose description cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the description of characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, etc.
- 15 If "Yes" is specified (*seed of this variety be sold by variety name only as a class of certified seed*) the applicant may **NOT** reverse his affirmative decision after the variety has either been sold and so labeled, his decision published, or the certificate has been issued. However, if the applicant specified "No," he may change his choice. (See section 180.16 of the Regulations and Rules of Practice.)
- 16 See section 42 of the Plant Variety Protection Act and section 180.7 of the Regulations and Rules of Practice.

GPO 890-698

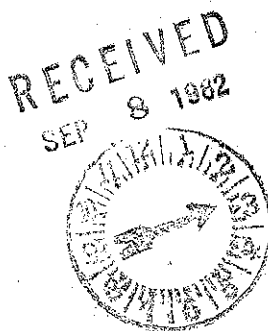


EXHIBIT AOrigin and Breeding History of Prelude Perennial Ryegrass

Prelude perennial ryegrass (Lolium perenne L.) is 205 clone synthetic cultivar developed through an extensive program of recurrent selection and backcrossing. This breeding program was initiated in 1968 to improve crown rust resistance in perennial ryegrass varieties being developed for turf use. Improvements were also sought in:

1. Resistance to Rhizoctonia brown patch, red thread, winter brown blight and dollarspot.
2. Increased winter hardiness.
3. Increased heat tolerance and better summer performance.
4. Better mowing qualities.
5. Finer texture.
6. A lower growth profile.
7. An attractive appearance including a pleasing, rich, dark green color.
8. Better performance at close mowing.
9. Better performance under low maintenance.
10. More economical seed production characteristics.
11. Improved wear tolerance.

Thousands of seedlings of named cultivars, experimental selections, collections from old turf, and Plant Introduction Accessions were assembled and screened for stress tolerance, adaptation, turf performance and as sources of disease resistance. Some of the disease screening was done in cooperation with the Plant Pathology Department of the New Jersey Agricultural Experiment Station. During the period from 1969 through 1976, over 250,000 seedlings were screened

for disease resistance under greenhouse conditions and over 25,000 selections were evaluated in spaced-plant nurseries using programs of phenotypic recurrent selection and backcrossing.

In August of 1976, a total of 800 selected entries were seeded in turf plots at North Brunswick, New Jersey. An additional 1700 selections were seeded in turf plots at Adelphia, New Jersey, in August 1977. Both tests received close, frequent mowing at 2-cm, moderate and high fertility levels, and irrigation to prevent severe drought stress. Both tests were rated at frequent intervals for turf performance and as conditions permitted for disease resistance, winter injury and tolerance of summer stress. During August of 1978, a total of 2580 tillers were selected from plots having the best overall performance records. These tillers were subsequently transferred to an isolated spaced-plant nursery at Adelphia, New Jersey, during September 1978. A heavy natural epiphytotic of crown rust incited by Puccinia coronata corda var. lolii Brown occurred during the fall of 1978 allowing the more susceptible plants to be removed from the nursery. The remaining plants were closely examined at frequent intervals during the spring of 1979. Immediately prior to anthesis, 170 plants were selected from the nursery based on attractive appearance, freedom from disease, a rich dark green color, soft leaves, turf-type growth habit, absence of leaf roll during drought stress, and uniform early maturity. These selected plants were transferred to an isolated crossing block at New Brunswick, New Jersey. Additionally, a second group of 35 plants were selected from a separate spaced-plant nursery containing crosses with newer sources of resistance to crown rust. The 205 plants were randomly intercrossed to produce the initial breeder seed of Prelude. A second lot of breeder seed was subsequently produced in an isolation nursery at Adelphia, New Jersey in June 1980.

This breeder seed was used to establish turf plot trials and to plant a 15 acre foundation seed increase field in Western Oregon. First crop of certified seed was produced in Western Oregon in 1982. Seed propagation of Prelude is limited to two generations of increase from breeder seed, one each of foundation and certified.

No off-type plants or variants have been observed in the reproduction and multiplication of this variety. Prelude is a stable and uniform variety. Breeder seed harvested and foundation seed harvested have produced turf and seed fields of equal quality and acceptable uniformity.

The sources of the 205 parental plants of Prelude are listed in Table 1.

Table 1. Sources of the parental clones of Prelude perennial ryegrass.

Source	Origin	Number of Clones Selected
1. A77-121	PT562-4	50
2. A77-122	PT562-5	49
3. A77-101	PT516-1	24
4. H76-192	H-335 (Pennfine)	14
5. A77-123	PT562-7	8
6. H76-93	CJ43 (H-639)	7
7. H76-108	CJ58 (H-594)	4
8. H76-113	CJ63 (H-499)	3
9. H76-65	CH15 (H-499)	3
10. H76-166	H-335 (Pennfine)	3
11. A77-351	FL-1076	3
12. A77-1415	RRBS	1
13. A76-79	CH29 (H-594)	1
14. Elka X Pennant		16
15. Elka X 365-5 (FL969)		9
16. Elka X PT703-1		4
17. Elka X L4H		3
18. Elka X 4037 (FL960)		3
Total		205

EXHIBIT BSTATEMENT OF NOVELTY OF PRELUDE PERENNIAL RYEGRASS

'Prelude' can be distinguished from all other cultivars by the combination of spaced-plant and turf characteristics displayed in Tables 1-13.

Prelude most closely resembles Citation. They can be distinguished by the following characteristics:

1. Prelude reaches anthesis 2-4 days later than Citation, Hubbard, Oregon (Table 1).
2. Prelude is significantly more resistant to crown rust incited by Puccinia coronata than Citation (Table 2).
3. Prelude has a significantly taller plant height at anthesis than Citation (Table 3).
4. Prelude has a significantly longer flag leaf length than Citation (Table 4).



Table 1. Anthesis date of perennial ryegrass cultivars,  
Hubbard, Oregon.

CULTIVAR	Anthesis	
	1980 <sup>1</sup>	1982 <sup>2</sup>
Citation	6/1	5/23
Premier	6/3	5/24
Prelude	6/5	5/25
Manhattan	6/21	6/9

<sup>1</sup> Date of anthesis being the date on which 10% of the panicles for each cultivar flowered.

<sup>2</sup> Date of anthesis being the date on which 50% of the panicles for each cultivar flowered.

Table 2. Response of perennial ryegrass cultivars to crown rust incited by Puccinea coronata in replicated greenhouse studies, New Brunswick, New Jersey 1979-1981.

CULTIVAR	RUST RATING
	1-9=most disease
Prelude	1.3 a <sup>2</sup>
Citation	4.1 b

<sup>1</sup> Average of 3 separate tests conducted over a 2 year period.

<sup>2</sup> Means followed by same letter are not significantly different (Duncan's multiple range test,  $p=0.05$ ).

Table 3. Plant height at anthesis of perennial ryegrass cultivars, replicated (2) yield trials, Hubbard, Oregon.

CULTIVAR	PLANT HEIGHT			
	1980	STANDARD ERROR	1982	STANDARD ERROR
	—cm—		—cm—	
Prelude	94.2	1.20	80.1	.48
Pennfine	91.8	0.99	79.7	.47
Citation	88.7	0.91	70.5	.49

Table 4. Flag leaf length of perennial ryegrass cultivars, replicated (2) yield trials, Hubbard, Oregon.

CULTIVAR	FLAG LEAF LENGTH <sup>1</sup>			
	1980	STANDARD ERROR	1982	STANDARD ERROR
	<del>—cm—</del>		<del>—cm—</del>	
Citation	11.1	.6	13.6	.29
Prelude	17.4	.6	15.6	.50

<sup>1</sup>Average of 40 leaves per replicate.

Table 12. <sup>SOD WEBWORM (CRAMBUS SPP.)</sup> <sup>Est as per letter</sup> <sup>dt'd 9/24/82.</sup> Billbug damage to perennial ryegrass cultivars, Adelphia, New Jersey, August 1980.

CULTIVAR	SOD WEBWORM (CRAMBUS SPP.) BILLBUG DAMAGE
	<u>%</u> <sup>Est as per letter</sup> <sup>dt'd 9/24/82.</sup>
Prelude	17.5
Palmer	30.0
Pennfine	53.7
Yorktown II	61.2
Citation	62.5
Manhattan	80.0
LSD .05	18.1

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
GRAIN DIVISION  
HYATTSVILLE, MARYLAND 20782  
**OBJECTIVE DESCRIPTION OF CULTIVARS**  
**RYEGRASS**  
(*Lolium spp.*)

NAME OF APPLICANT(S) Lofts Seed Inc.	VARIETY NAME OR TEMPORARY DESIGNATION Prelude Perennial Ryegrass
ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code) Chimney Rock Rd. P.O. Box 146, Bound Brook, NJ 08805	FOR OFFICIAL USE ONLY PVPO NUMBER 8200177

Place the appropriate number that describes the varietal character of this variety in the boxes below. Place a zero in first box (e.g. 089 or 09) when number is either 99 or less or 9 or less. Descriptions of characters should represent those that are typical for the variety. Ranges may be given also. Measured data should be for SPACED PLANTS. Give additional description for all characteristics that cannot be adequately described in the form below. Append all pertinent comparative trial and evaluation data.

## 1. SPECIES:

2 1 = L. MULTIFLORUM (annual or Italian; includes *Westerwoldicum*) 2 = L. PERENNE (perennial) 3 = L. RIGIDUM (includes *Wimmera*)  
4 = HYBRID (of species) 5 = OTHER (Specify)

## 2. PLOIDY:

1 1 = DIPLOID 2 = TETRAPLOID 3 = OTHER (Specify)

## 3. DURATION:

3 1 = ANNUAL OR BIENNIAL 2 = SHORT LIVED PERENNIAL (3-4 years) 3 = PERENNIAL (more than 4 years)

## STANDARD CULTIVARS

1 = GULF 2 = WIMMERA 62 3 = LINN 4 = PELO  
5 = NORLEA 6 = ABERYSTWYTH S-23 7 = MANHATTAN 8 = PENNFINE

## 4. MATURITY (80% HEADED) Use standards from above for comparison: (Table 1)

4 1 = VERY EARLY 3 = EARLY 1 6 DAYS EARLIER THAN 7 STANDARD CULTIVAR  
5 = MEDIUM 7 = LATE 4 7 STANDARD CULTIVAR  
9 = VERY LATE 1 6 DAYS LATER THAN 7 STANDARD CULTIVAR

## 5. MATURE PLANT HEIGHT (Use standard cultivars from above): (Table 3)

0 9 4 CM. HIGH 4 CM. SHORTER THAN STANDARD CULTIVAR  
CM. TALLER THAN STANDARD CULTIVAR

## 6. PERCENT WINTER DAMAGE (estimated as percent of the area appearing dead). Use standard cultivars from above for comparison:

PERCENT DAMAGE OF APPLICATION CULTIVAR  
PERCENT DAMAGE OF STANDARD CULTIVAR

## 7. TURF DENSITY Use standard cultivars from above: (Table 5)

4 5 7 TILLERS PER 100 SQ. CM.  
LESS TILLERS PER 100 SQ. CM. THAN STANDARD CULTIVAR  
1 5 5 MORE TILLERS PER 100 SQ. CM. THAN 7 STANDARD CULTIVAR

## 8. FLAG LEAF (at full growth) Use standard cultivars from above:

0 1 6 CM. LENGTH (from ligule to tip) (Table 4) 0 0 4 MM. WIDTH (at widest point) (Table 6)  
CM. SHORTER THAN STANDARD CULTIVAR FLAG LEAF AT BOOT STAGE: 1 = DEFLEXED 3 = RECURVED 5 = HORIZONTAL 7 = SEMI-ERECT 9 = ERCT  
CM. LONGER THAN STANDARD CULTIVAR  
0 0 1 MM. NARROWER THAN 8 STANDARD CULTIVAR  
MM. WIDER THAN STANDARD CULTIVAR

1 = GULF 2 = WIMMERA 62 3 = LINN 4 = PELO  
5 = NORLEA 6 = ABERYSTWYTH S-23 7 = MANHATTAN 8 = PENNFINE

## 9. LEAVES:

1 = LEAVES ROLLED IN YOUNG SHOOTS

VERNAION: 2 = LEAVES SEMI-ROLLED (folded with rolled edges)

3 = LEAVES FOLDED IN YOUNG SHOOTS

% PLANTS WITH ANTHOCYANIN IN LOWER LEAF SHEATH

FOLIAGE COLOR:

1 = YELLOW GREEN  
2 = MEDIUM GREEN  
3 = BLUE GREEN

## 10. SPIKE:

(Table 7)

MM. SPIKE LENGTH (tip to internode below lowest floret)

MM. SHORTER THAN

MM. LONGER THAN

MG. PER TEN SPIKES (trimmed to internode below lowest floret) (Table 8)

MG. LIGHTER PER TEN SPIKES THAN

MG. HEAVIER PER TEN SPIKES THAN

FLORETS PER SPIKELET

## PERCENTAGE OF PLANTS WITH: (Table 9)

RACHIS: % SMOOTH

% ROUGH

SPIKE COLOR: % GREEN

% PURPLE

LEMMA: % AWNED

MM. AWN LENGTH

MM. GLUME LENGTH (Table 10)

1 = SPIKELET LENGTH NEARLY EQUAL TO OUTER GLUMES  
2 = SPIKELET LENGTH MUCH LONGER THAN OUTER GLUMES

## 11. COLEOPTILE:

% PLANTS WITH ANTHOCYANIN IN COLEOPTILE

## 12. ANTHOR COLOR: (Table 11)

% PLANTS WITH WHITE ANTHORS

% PLANTS WITH YELLOW ANTHORS

% PLANTS WITH PURPLE ANTHORS

## 13. ROOT AND PLANT CHARACTERS:

% PLANTS WITH PROSTRATE GROWTH HABIT

% PLANTS WITH FLUORESCENT ROOTS

% PLANTS WITH UPRIGHT GROWTH HABIT

## 14. SEED:

MG. PER 1,000 SEED

MM. TOTAL LENGTH OF 10 SEEDS

MM. TOTAL WIDTH OF TEN SEEDS

15. DISEASE (0 = NOT TESTED, 2 = HIGHLY SUSCEPTIBLE, 4 = MODERATELY SUSCEPTIBLE, 6 = MODERATELY RESISTANT, 8 = HIGHLY RESISTANT):

<input type="text" value="8"/>	CROWN RUST ( <i>Puccinia coronata</i> )	<input type="text" value="0"/>	DOLLAR SPOT ( <i>Sclerotinia</i> )	<input type="text" value="7"/>	BROWN PATCH ( <i>Rhizoctonia</i> )
<input type="text" value="6"/>	Winter brown blight LEAF SPOT ( <i>Helminthosporium</i> )	<input type="text" value="0"/>	MILDEW	<input type="text" value="0"/>	OTHER (Specify) _____
<input type="text" value="0"/>	SNOW MOLD ( <i>Typhula</i> )	<input type="text" value="0"/>	RED THREAD ( <i>Corticium</i> )		

16. INSECT (0 = NOT TESTED, 2 = HIGHLY SUSCEPTIBLE, 4 = MODERATELY SUSCEPTIBLE, 6 = MODERATELY RESISTANT, 8 = HIGHLY RESISTANT):

SOD weevil  
 (Specify) Billbug (Table 12)  
etc. as per letter dtd 9/24/82

17. GIVE RESEMBLANCE VALUE IN LEFT COLUMN AND VARIETY CODE NUMBER IN RIGHT COLUMN FOR VARIETY WITH WHICH COMPARISON IS MADE (1 = LESS THAN, 2 = SAME AS, 3 = MORE ERECT, MORE RESISTANT, DENSER, MORE PERSISTENT, DARKER OR GREATER HEIGHT.):

RESEMBLANCE	CHARACTER	SIMILAR VARIETY
<input type="text" value=""/>	PLANT HABIT (erectness)	<input type="text" value=""/> 1 = GULF
<input type="text" value="3"/>	TILLERING (Table 5)	<input type="text" value="8"/> 2 = WIMMERA 62
<input type="text" value="3"/>	WINTER HARDINESS	<input type="text" value="8"/> 3 = LINN
<input type="text" value="3"/>	HIGH TEMP. STRESS RESISTANCE	<input type="text" value="7"/> 4 = PELO
<input type="text" value="3"/>	TURF PERSISTENCE	<input type="text" value="8"/> 5 = NORLEA
<input type="text" value="3"/>	PLANT COLOR	<input type="text" value="7"/> 6 = ABERYSTWYTH S-23
<input type="text" value="1"/>	VERTICAL SEEDLING GROWTH RATE	<input type="text" value="7"/> 7 = MANHATTAN
<input type="text" value="3"/>	CROWN DENSITY	<input type="text" value="8"/> 8 = PENNFINE
<input type="text" value="3"/>	MOWER SHREDDING RESISTANCE	<input type="text" value="8"/>

18. GIVE AREA OF ADAPTATION AND INTENDED USE: Wherever cool season turfgrasses are grown.

19. GIVE AREA TEST RESULTS PRESENTED FROM: \_\_\_\_\_

COMMENTS:



EXHIBIT DAdditional Description of the Variety

Prelude is an early maturing, leafy, turf-type perennial ryegrass capable of producing a persistent, moderately dense, attractive, low-growing, fine-textured turf with a bright rich dark green color (Table 13). Prelude has the rapid germination, ease of establishment and wear tolerance characteristics of the other improved turf-type perennial ryegrasses. It has shown good winter hardiness on well-drained soils as well as improved summer performance in New Jersey tests.

**FILED**

**JAN 14 1998**

**LONNA R. HOOKS  
SECRETARY OF STATE**

**CERTIFICATE OF MERGER OF  
LOFTS SEED, INC. INTO  
LOFTS MERGERCO, INC.**

**To: The Secretary of State  
State of New Jersey**

Pursuant to the provisions of Section 14A:10-7 Corporations, General, of the New Jersey Statutes, the undersigned corporations hereby execute the following Certificate of Merger.

**ARTICLE ONE**

The names of the corporations proposing to merge and the states under the laws of which such corporations are organized, are as follows:

Name of Corporation

State of Incorporation

Lofts Seed, Inc.  
Lofts Mergerco, Inc.

New Jersey  
Nevada

**ARTICLE TWO**

The laws of the State of Nevada, the state under which such foreign corporation is organized, permit such merger and the applicable provisions of the laws of said jurisdiction have been, or upon compliance with filing and recording requirements will have been, complied with.

**ARTICLE THREE**

The name of the surviving corporation shall be Lofts Mergerco, Inc. and it shall be governed by the laws of the State of Nevada.

The address of the surviving corporation's registered office is 2700 Sunset Rd., Las Vegas, Nevada 89120 and the name of the registered agent at such address is Johnny Thomas.

**ARTICLE FOUR**

The following plan of Merger was approved by the shareholders of the undersigned domestic corporation in the manner prescribed by the New Jersey Business Corporation Act, and was approved by the undersigned foreign corporation in the manner prescribed by the laws of the State under which it is organized:

0100731429

**FILED**  
IN THE OFFICE OF THE  
SECRETARY OF STATE OF THE  
STATE OF NEVADA

**JAN 26 1998**

*C26394-92*

*Alan Heller*  
ALAN HELLER, SECRETARY OF STATE

## CERTIFICATE OF AMENDMENT OF

### ARTICLES OF INCORPORATION OF

LOFTS MERGERCO, INC.

Pursuant to the provisions of Nevada Revised Statutes, Title 7, Chapter 78, the undersigned officers do hereby certify:

**FIRST:** The name of the Corporation is Loftis Mergerco, Inc.

**SECOND:** The Board of Directors of the Corporation duly adopted the following resolutions on January 12 1998:

**RESOLVED**, that it is advisable in the judgment of the Board of Directors of the Corporation that the name of the Corporation be changed, and that, in order to accomplish the same, Article FIRST of the Articles of Incorporation be amended to read as follows:

"FIRST: The name of the corporation (hereinafter called the Corporation) is Loftis Seed Company, Inc."

**FURTHER RESOLVED**, that a special meeting of the sole stockholder having voting power be and it is hereby called and that notice be given in the manner prescribed by the By-laws of the Corporation and by Nevada Revised Statutes, Title 7, Chapter 78, unless the said stockholder shall waive the notice of meeting in writing or unless the said stockholder shall dispense with the holding of a meeting and shall take action upon the proposed amendment by a consent in writing signed by the sole stockholder, and

**FURTHER RESOLVED**, that in the event that the said stockholder shall adopt the aforesaid proposed amendment by a vote in favor thereof by at least a majority of the voting power or by a written consent in favor thereof signed by the sole stockholder without a meeting, the Corporation is hereby authorized to make by the hands of its President or a Vice President and by its Secretary or an Assistant Secretary a certificate setting forth the said amendment and to cause the same to be filed pursuant to the provisions of Nevada Revised Statutes, Title 7, Chapter 78.



**FILED**  
IN THE OFFICE OF THE  
SECRETARY OF STATE OF THE  
STATE OF NEVADA

NOV 29 1999

No.

*C 7446-89*

*Dean Heller*

DEAN HELLER, SECRETARY OF STATE

ARTICLES OF MERGER  
OF  
LOFTS SEED COMPANY, INC.  
INTO  
AGRIBIOTECH, INC.

Pursuant to the provisions of N.S.R. § 92A.180 and N.R.S. § 92A.200, AgriBioTech, Inc., a Nevada corporation, hereby submits these Articles of Merger for the purpose of merging Lofts Seed Company, Inc., a Nevada corporation and wholly-owned subsidiary of AgriBioTech, Inc., into AgriBioTech, Inc.

ARTICLE I.

Corporations Proposing to Merge and Surviving Corporation

The name of the merging corporation is Lofts Seed Company, Inc., a Nevada corporation (hereinafter called the "Subsidiary Corporation"); and the name of the corporation which shall be the surviving corporation is AgriBioTech, Inc., a Nevada corporation (hereinafter called the "Parent Corporation").

ARTICLE II.

Adoption of Plan of Merger

The Plan of Merger set forth in Article IV was duly adopted by the Parent Corporation and the Subsidiary Corporation.

ARTICLE III.

Approval by Shareholders

Pursuant to N.R.S. § 92A.180, neither the approval of the Shareholders of the Parent Corporation, nor the approval of the Shareholders of the Subsidiary Corporation was required.

ARTICLE IV.

Plan of Merger

The following Plan of Merger was duly approved on November 15, 1999, in the manner prescribed by law with respect to each of the corporations participating in the Merger:

Section 1. Corporations Proposing to Merge and Surviving Corporation. The name of the merging corporation is Lofts Seed Company, Inc., a Nevada corporation (hereinafter called the "Subsidiary Corporation"); and the name of the corporation which shall be the surviving corporation is AgriBioTech, Inc., a Nevada corporation (hereinafter called the "Parent Corporation").

Section 2. Effective Time of Merger. The effective time of the merger shall be November 29, 1999 at 11:59 p.m. E.S.T. (the "Effective Time").

Section 3. Effects of Merger. The Merger shall have the effects set forth in N.R.S. § 92A.250.

Section 4. Conversion of Shares. Each share of capital stock of the Subsidiary Corporation issued and outstanding at the Effective Time shall, as of the Effective Time, by virtue of the Merger and without any action on the part of the holder thereof, be canceled and extinguished without consideration given therefor. The shares of capital stock of the Surviving Corporation shall continue to be outstanding without change.

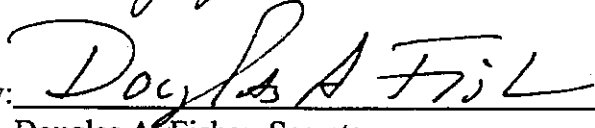
Section 5. Articles of Incorporation and Bylaws. The Articles of Incorporation and the Bylaws of the Surviving Corporation as in effect immediately prior to the Effective Time shall become the Articles of Incorporation and Bylaws of the Surviving Corporation following the Effective Time until changed in accordance with their terms and applicable law.

*[Signature page to follow]*

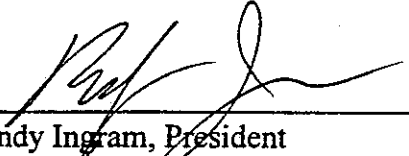
This the 15<sup>th</sup> day of November, 1999.

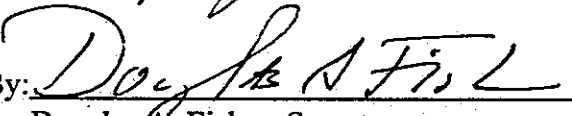
AGRIBIOTECH, INC., a Nevada corporation

By:   
Randy Ingram, Executive Vice President

By:   
Douglas A. Fisher, Secretary

LOFTS SEED COMPANY, INC., a Nevada corporation

By:   
Randy Ingram, President

By:   
Douglas A. Fisher, Secretary

RECORDATION FORM COVER SHEET  
PVP CERTIFICATES ONLY

To the Acting Commissioner of the Plant Variety Protection Office. Please record the attached original documents or copy thereof.

1. Name of conveying party(ies):

**LOFTS SEED COMPANY, INC.**

- ☐ Individual(s) ☐ Association  
☐ General Partnership ☐ Limited Partnership  
☒ Corporation - State Nevada  
☐ Other \_\_\_\_\_

Additional name(s) of conveying party(ies) attached? ☐ Yes ☒ No

3. Nature of conveyance:

- ☐ Assignment ☐ Merger  
☒ Security Agreement ☐ Change of Name  
☐ Other \_\_\_\_\_

Execution Date: June 23, 1998

2. Name and address of receiving party(ies):

Name: BANKAMERICA BUSINESS CREDIT, INC.

Street Address: 55 South Lake Avenue, Suite 900

City: Pasadena State: California

ZIP: 91101

- ☐ Individual(s) citizenship \_\_\_\_\_

☐ Association \_\_\_\_\_

☐ General Partnership \_\_\_\_\_

☐ Limited Partnership \_\_\_\_\_

☒ Corporation-State Delaware

☐ Other \_\_\_\_\_

If assignee is not domiciled in the United States, a domestic representative designation is attached: ☐ Yes ☒ No

(Designation must be a separate document from Assignment)  
Additional name(s) & address(es) attached? ☐ Yes ☒ No

4. PVP certificate identifying information:

A. PVP No.: **8200177**

B. Date certificate issued or application filed: **05/31/84**

C. Variety: **"PRELUDE" Ryegrass, perennial**

Additional numbers attached? ☐ Yes ☒ No

5. Name and address of party to whom correspondence concerning document should be mailed:

Name: Tamsen Valoir  
Jenkins & Gilchrist

Internal Address: \_\_\_\_\_

Street Address: 1445 Ross Avenue,  
Suite 3200

City: Dallas State: Texas Zip: 75202-2799

6. Total number of PVP applications or certificates involved: **1**

7. Total fee (37 CFR 3.41): \$ 25.00

☒ Enclosed

☐ Authorized to be charged to deposit account.

8. Deposit Account number: \_\_\_\_\_

(Attach duplicate copy of this page if paying by deposit account)

DO NOT USE THIS SPACE

9. Statement and signature.

*To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.*

Tamsen Valoir

Name of Person Signing

Signature

June 30, 1998

Date

Total number of pages comprising cover sheet:

**1**



## **PVP CERTIFICATE ASSIGNMENT**

**WHEREAS**, LOFTS SEED COMPANY, INC., a Nevada corporation ("Assignor"), having a business address of 191 Budd Blvd., Winston Salem, NC 27114, is the owner of the pending or issued Plant Protection Act (PVP) certificate(s) listed below; and

**WHEREAS**, BankAmerica Business Credit, Inc., a Delaware corporation, having an office at 55 South Lake Avenue, Suite 900, Pasadena, California 91101 as "Agent" for the "Lenders" as defined and described in the Loan and Security Agreement dated as of June 23, 1998 ("Assignee"), is desirous of acquiring a SECURITY INTEREST in such PVP certificate(s);

**NOW, THEREFORE**, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, said Assignor does hereby sell, assign, transfer and set over unto the said Assignee a SECURITY INTEREST in, to, and under the PVP certificate(s):

No. 9600256 Pending  
No. 9200256 Issued  
No. 9500090 Pending  
No. 9600228 Pending  
No. 9600277 Pending  
No. 8100157 Issued  
No. 8200187 Issued  
No. 8800230 Issued  
No. 9500238 Pending  
No. 8900288 Issued  
No. 9300200 Pending  
No. 9500129 Pending  
No. 8000153 Issued  
No. 8200175 Issued  
No. 8700195 Issued  
No. 8800235 Issued  
No. 9000240 Issued  
No. 9200209 Pending  
No. 9200210 Pending  
No. 9200211 Pending  
No. 9200212 Pending  
No. 8200177 Issued  
No. 8200178 Issued  
No. 8400148 Issued  
No. 8200168 Issued  
No. 9100254 Issued  
No. 9500128 Issued

LOFTS SEED COMPANY, INC.

By: \_\_\_\_\_

Printed Name: Henry A. Ingalls

Title: Vice President

STATE OF TEXAS

§

§

COUNTY OF DALLAS

§

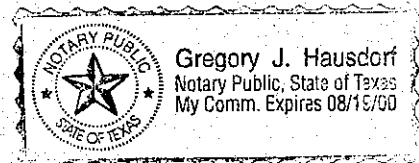
Henry A. Ingalls, Vice President, of LOFTS SEED COMPANY, INC., personally appeared before me, and being first duly sworn declared that he signed the security agreement in the capacity designated, and further states that he has read the above security agreement, and the statements therein contained are true.

SUBSCRIBED AND SWORN TO before me this 23 day of June, 1998.

\_\_\_\_\_  
Notary Public in and for the State of Texas

My Commission Expires: \_\_\_\_\_

\_\_\_\_\_  
Printed Name



UNITED STATES DEPARTMENT OF AGRICULTURE  
PLANT VARIETY PROTECTION OFFICE

CERTIFICATE OF MAILING

BOX ASSIGNMENT

Acting Commissioner of the Plant Variety Protection Office  
Plant Variety Protection Office  
10301 Baltimore Blvd.  
Beltsville, MD 20705-2351.

Dear Sir:

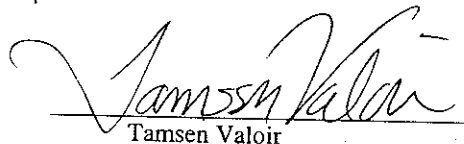
I hereby certify that this correspondence,

74 Cover sheets  
74 Assignments  
Check in the amount of \$1,850.00 (74 x \$25.00)  
74 Return postcards

for the attached (in Exhibit A) PVP certificate numbers are being deposited with the  
United States Postal Service as Express Mail, mailing label number EE507465254US, postage  
prepaid, in an envelope addressed to:

BOX ASSIGNMENT

Acting Commissioner of the Plant Variety Protection Office  
Plant Variety Protection Office  
10301 Baltimore Blvd.  
Beltsville, MD 20705-2351.

  
Tamsen Valoir

Date: July 1, 1998

IPHO:15412.1 20992-00039

**Jenkins & Gilchrist**

A PROFESSIONAL CORPORATION  
1100 LOUISIANA STREET, SUITE 1800  
HOUSTON, TEXAS 77002

TEXAS COMMERCE BANK, N.A.  
301 W. BEAUREGARD  
SAN ANGELO, TEXAS 76903

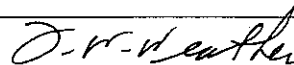
903870

DATE	AMOUNT
July 1, 1998	*\$1,850.00*

AY \*One Thousand Fifty Dollars and 00 Cents\*

TO THE  
ORDER  
OF

U. S. Department Of Agriculture  
Plant Variety Protection Office

  
TWO SIGNATURES REQUIRED OVER \$2500  
VOID AFTER 180 DAYS  
NOT VALID FOR OVER \$5000

00903870 1113008801 06300009654



The Company hereby further acknowledges and affirms that the rights and remedies of the Lender with respect to the security interest in and lien upon the Company's rights in the Agricultural Intellectual Property Collateral made and granted hereby are more fully set forth in the Loan Agreement, the terms and provisions of which are hereby incorporated herein by reference as if fully set forth herein.

Further, by this Security Agreement, the Company agrees to assign to Lender, upon the occurrence of an Event of Default by the Company (as defined in the Loan Agreement), all of the Company's rights in and to the Agricultural Intellectual Property Collateral; provided that this assignment is expressly contingent upon the occurrence of an Event of Default.

This Security Agreement will become effective June 28, 1996 at the Effective Time of the Merger of Budd Acquisition, Inc., a New Jersey corporation, with and into Lofts Seed Inc., a New Jersey corporation, as provided in a Certificate of Merger to be filed with the New Jersey Secretary of State's office.

IN WITNESS WHEREOF, the Company has caused this Security Agreement to be duly executed by its authorized officer or agent as of June 28, 1996.

LOFTS SEED INC.

[Corporate Seal]

By: Richard P. Budd

Name:

Title: CEO

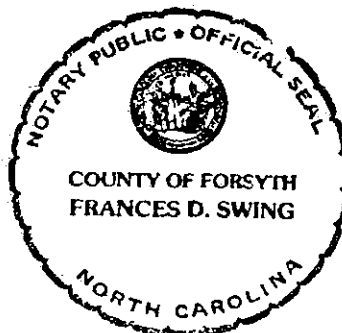
On JUNE 28, 1996, RICHARD P. BUDD personally came before me, FRANCES D. SWING, a Notary Public for said County and State, RICHARD P. BUDD who being by me duly sworn, says that he is CEO of Lofts Seed Inc., and that said writing was signed and sealed by him on behalf of said corporation by its authority duly given. The said RICHARD P. BUDD acknowledged the said writing to be the act and deed of the corporation.

WITNESS my hand and notarial seal.

Frances D. Swing  
Notary Public

My Commission Expires: 2-9-97

Dated this 28<sup>th</sup> day of June 1996.



**SCHEDULE A**  
**AGRICULTURAL INTELLECTUAL PROPERTY COLLATERAL**  
**(CERTIFICATES OF PLANT VARIETY PROTECTION)**

**A. KENTUCKY BLUEGRASS**

VARIETY NAME	NUMBER	DATE APPLIED	DATE ISSUED	EXPIRES
Princeton P105	9600228	4-22-96	Pending	
Eagleton	9600277	6-11-96	Pending	
Preakness	9500090	2-13-95	Pending	
Mystic	8100157	8-26-81	5-27-82	5-27-00
Georgetown	8200187	1982	7-24-83	7-21-01
Lofts 1757	8800230	1988	9-30-92	9-30-10
Laser (Rough Bluegrass)	8900288	1989	10-31-91	10-31-09
Co-owned PVPs				
243 (Nassau)*	8400005	1983	12-21-84	12-21-02
Suffolk*	8800072	1988	5-31-88	5-31-06
Ram I**	7800069	1978	3-15-79	3-15-96

\* Jacklin Seed Company listed as co-owner

\*\* Mrs. Barbara B. Curtis listed as co-owner

**B. PERENNIAL RYEGRASS**

VARIETY NAME	NUMBER	DATE APPLIED	DATE ISSUED	EXPIRES
Palmer	8200178	9-8-82	5-31-84	5-31-02
Palmer II	9200209	6-16-92	Pending	
Prelude	8200177	9-8-82	5-31-84	5-31-02
Prelude II	9200210	6-16-92	Pending	
Yorktown III	9200212	6-16-92	Pending	

VARIETY NAME	NUMBER	DATE APPLIED	DATE ISSUED	EXPIRES
Repell	8400148	8-30-84	11-29-85	11-29-03
Yorktown II	7800001	10-6-77	5-1-80	5-1-97
Repell II	9200211	6-16-92	Pending	

**C. TALL FESCUE**

VARIETY NAME	NUMBER	DATE APPLIED	DATE ISSUED	EXPIRES
Rebel	8000153	8-21-80	5-14-81	5-14-99
Rebel III	9500129	4-10-95	Pending	
Rebel Jr.	9000240	1990	11-30-92	11-30-10
Rebel 3D	9300200	4-21-93	Pending	
Tribute	8800235	9-15-88	2-28-90	2-28-08
Clemfine	8200175	9-7-82	2-28-83	2-28-01
Rebel II	8700195	1987	1-15-88	1-15-06

**D. FINE FESCUE**

VARIETY NAME	NUMBER	DATE APPLIED	DATE ISSUED	EXPIRES
Reliant	8200168	1982	2-28-83	2-28-01
Jamestown II	9100254	1991	8-31-95	8-31-15

**E. BENTGRASS**

VARIETY NAME	NUMBER	DATE APPLIED	DATE ISSUED	EXPIRES
L93	9600256	5-8-96	Pending	
Southshore	9200256	1992	10-31-94	10-31-12

**F. OTHER**

VARIETY NAME	NUMBER	DATE APPLIED	DATE ISSUED	EXPIRES
Salty (weeping alkaligrass)	9500128	4-10-95	Pending	
Laser II (rough bluegrass)	9500238	6-15-95	Pending	